## SEQUENCE LISTING

```
<110> Brooks, Cydney C.
<120> Methods for Treating Diabetes and Insulin resistance
<130> ADY-009
<150> 60/401,389
<151> 2002-08-05
<160> 2
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 3775
<212> DNA
<213> Homo sapiens
<400> 1
tgagccggggggcagagccat ggcgggcggg gaagaccgcg gggacggaga gccggtatca 60
gtggtgaccg tgagggtgca gtacctggaa gacaccgacc ccttcgcatg tgccaacttt 120
coggagocgo geogggeece cacetgeage etggaegggg egeffgeeett gggegegeag 180
ataccogogg tgcaccgcct gctgggagcg ccgctcaagt tgggaggattg tgctctqcaa 240
gtgtctccct ccggatacta cctggacacc gagctgtccc tggaagagca gcgggagatg 300
ctggaggget tetatgaaga gateageaaa gggeggaage eeacgetgat eetteggaee 360
cagetetetg tgagggteaa egetatettg gaaaagetgt atageteeag tggteetgag 420
cteegeeget ceetettete aetgaageag atetteeagg aggacaaaga eetggtgeet 480
gaatttgtgc attcagaggg gctgagctgc ctgatccgtg tgggtgctqc tgccgaccac 540
aactaccaga gctacatcct tagagcgctc ggccagctga tgctctttgt ggatggaatg 600
ctgggggtgg tggcccacag tgacactatt cagtggctgt acacattgtg tgccagcctg 660
tecegettgg tggtgaagac ageeetgaag etgetgttgg tgtttgtaga ataeteegaa 720
aacaacgcac cgctgttcat ccgtgcagtg aactctgtgg ccacgaccac cggtgctcct 780
ccctgggcca atctggtgtc catcctggag gagaagaatg gcgctgaccc tgagttgttg 840
gtgtacacgg tcaccetcat caacaagacg etggcggcgc tcccggacca ggactecttc 900
tacgatgtga cggatgcact ggagcagcag ggcatggaca cgctggtcca gcgccacctg 960
ggcactgcgg gcactgacgt cgacctgcgc acgcagcttg tgctctacga gaacgccctg 1020
aaattggagg'atggagacat cgaagaagcc ccaggcgctg gtgggcggcg ggaacgacga 1080
aagcettett etgaggaggg caagaggage egeegttete tggaaggegg gggetgeeee 1140
gegegtgeec eggaacetgg ecceacagge eccgecteae eggtaggeec eacetettee 1200
accggccccg ccctgctgac aggccccgcc tccagccctg tqqqccctcc ctccqqtctc 1260
caagetteag tgaacetttt teetaceate tetgtggeae eeteagetga eaceteeage 1320
gagaggagca tctacaaagc ccggttcctg gagaatgtgg cggcagcaga aacagagaag 1380
caggttgcgc tggcccaggg ccgggcagag acacttgccg gggccatgcc caatgaggcg 1440
ggtggacacc cagatgcccg gcaactctgg gactccccag agacagcccc tgcagccaga 1500
acaccccaga geoctgeece etgtgteetg eteegggeee agegaageet tgeaccagag 1560
cccaaggage cactgatace ageaageeec aaggetgage ecatetggga geteectace 1620
cgtgcaccca ggctctctat tggggacctg gacttttcag atctagggga ggatgaagac 1680
caggacatgc tgaatgtaga gtctgtggag gctgggaaag acatcccagc tccctcaccc 1740
ccactgoccc tgctctcggg agtaccccc cctcccccac ttccacctcc cccacccatc 1800
aaaggcccct tcccaccacc tccacctcta cctctggctg cccctcttcc ccattcagtg 1860
cetgacaget eagecetece cactaagagg aagacagtaa aacttttetg gegtgacgtg 1920
aagctggctg ggggccatgg agtctctgca agccgctttg ggccctgcgc caccctctgg 1980
getteactgg accetgiete agtggacaeg geeggactgg aacacetett tgagtetegt 2040
gccaaagagg tgctgccctc caagaaagct ggagagggcc gccggacaat gaccacagtg 2100
ctggacceca agegçacgaa egecateaac ateggectaa ecacaetgee acetgtgeat 2160
gtcattaagg ctgctctgct caactttgat gagtttgctg tcagcaagga tggcattgag 2220
aagctactga ccatgatgcc cacggaggaa qagcqqcaga agattqaggg agcccaqctg 2280
gccaaccetg acataccect gggcccagec gagaacttee tgatqactet tgcctccatt 2340
```

```
ggeggeeteg etgetegtet acaactetgg geetteaage tggaetatga cageatggag 2400
cgggaaattg ctgagccact gtttgacctg aaagtgggta tggaacagct ggtacagaat 2460
gecaectice getgeateet ggetaecete etagetgtgg geaactieet caatggetee 2520
cagagcagcg gctttgagct gagctacctg gagaaggtgt cagatgtgaa ggacacggtg 2580
cgtcgacagt cactgctaca ccatctctgc tccctagtgc tccagacccg gcctgagtcc 2640
tetgacetet atteagaaat eeetgeeetg acceqetgtg eeaaggtgga etttgaacag 2700
ctgactgaga acctggggca gctggagcgc cggagccggg cagccgagga aagcctgcgg 2760
agettggeca ageatgaget ggeeceagee etgegtgeee geeteaceea etteetggae 2820
cagtgtgeec geegtgttge catgetaagg atagtgeace geegtgtetg caataggtte 2880
catgoettee tgetetacet gggetacace eegeaggegg eeegtgaagt gegeateatg 2940
cagttotgcc acacgotgcg ggaatttgcg ottgagtato ggacttgccg ggaacgagtg 3000
ctacagcage ageagaagea ggeeacatae egtgagegea acaagaeeeg gggaegeatg 3060
atcaccgaga cagagaagtt ctcaggtgtg gctggggaag cccccagcaa cccctctgtc 3120
ccagtagcag tgagcagcgg gccaggccgg ggagatgctg acagtcatgc tagtatgaag 3180
agtetgetga ecageagget tgaggacaee acaeacaate geegeageag aggeatggte 3240
cagageaget ecceaateat geceaeagtg gggeeeteea etgeateece agaagaacee 3300
ccaggeteca gtttacecag tgatacatea gatgagatea tggaeettet ggtgeagtea 3360
gtgaccaaga gcagteeteg tgeettaget getagggaae gcaagegtte eegeggeaae 3420
cgcaagtett tgagaaggae gttgaagagt gggeteggag atgaeetggt geaggeaetg 3480
ggactaagca agggteetgg cetggaggtg tgaaggtget gtateeegga aatetatetg 3540
gaccetggae tgeagtgeag gagatgaeag agtgaggagg geeeagagea gaattetgge 3600
cccagaactc tgtgcccagg agccatgcct tgagcagtat tagccgtgtg tgtatgcatg 3660
tgagtgtgtg tgtatgtgtg tgtgtgcatg catatgcatg tgcatgtgtg tgagctcctt 3720
<210> 2
<211> 1164
<212> PRT
<213> Homo sapiens
<400> 2
Met Ala Gly Glu Asp Arg Gly Asp Gly Glu Pro Val Ser Val Val
                                   10
Thr Val Arg Val Gln Tyr Leu Glu Asp Thr Asp Pro Phe Ala Cys Ala
           20
                               25
                                                   30
Asn Phe Pro Glu Pro Arg Arg Ala Pro Thr Cys Ser Leu Asp Gly Ala
Leu Pro Leu Gly Ala Gln Ile Pro Ala Val His Arg Leu Leu Gly Ala
                       55
Pro Leu Lys Leu Glu Asp Cys Ala Leu'Gln Val Ser Pro Ser Gly Tyr
Tyr Leu Asp Thr Glu Leu Ser Leu Glu Glu Gln Arg Glu Met Leu Glu
                85
Gly Phe Tyr Glu Glu Ile Ser Lys Gly Arg Lys Pro Thr Leu Ile Leu
                               105
                                                   110
Arg Thr Gln Leu Ser Val Arg Val Asn Ala Ile Leu Glu Lys Leu Tyr
                           120
                                               125
Ser Ser Ser Gly Pro Glu Leu Arg Arg Ser Leu Phe Ser Leu Lys Gln
                       135
Ile Phe Gln Glu Asp Lys Asp Leu Val Pro Glu Phe Val His Ser Glu
                    150
                                        155
Gly Leu Ser Cys Leu Ile Arg Val Gly Ala Ala Ala Asp His Asn Tyr
                165
                                   170
                                                       175
Gln Ser Tyr Ile Leu Arg Ala Leu Gly Gln Leu Met Leu Phe Val Asp
           180
                               185
                                                   190
Gly Met Leu Gly Val Val Ala His Ser Asp Thr Ile Gln Trp Leu Tyr
                           200
                                               205
Thr Leu Cys Ala Ser Leu Ser Arg Leu Val Val Lys Thr Ala Leu Lys
                       215
                                           220
Leu Leu Val Phe Val Glu Tyr Ser Glu Asn Asn Ala Pro Leu Phe
                    230
                                       235
```

```
Ile Arg Ala Val Asn Ser Val Ala Thr Thr Gly Ala Pro Pro Trp
               245
                                   250
Ala Asn Leu Val Ser Ile Leu Glu Glu Lys Asn Gly Ala Asp Pro Glu
           260
                               265
Leu Leu Val Tyr Thr Val Thr Lèu Ile Asn Lys Thr Leu Ala Ala Leu
       275
                           280
Pro Asp Gln Asp Ser Phe Tyr Asp Val Thr Asp Ala Leu Glu Gln Gln
                       295
Gly Met Asp Thr Leu Val Gln Arg His Leu Gly Thr Ala Gly Thr Asp
                   310
                                       315
Val Asp Leu Arg Thr Gln Leu Val Leu Tyr Glu Asn Ala Leu Lys Leu
                                   330
Glu Asp Gly Asp Ile Glu Glu Ala Pro Gly Ala Gly Gly Arg Arg Glu
           340
                               345
Arg Arg Lys Pro Ser Ser Glu Glu Gly Lys Arg Ser Arg Arg Ser Leu
                        . 360
Glu Gly Gly Cys Pro Ala Arg Ala Pro Glu Pro Gly Pro Thr Gly
                       375
                                           380
Pro Ala Ser Pro Val Gly Pro Thr Ser Ser Thr Gly Pro Ala Leu Leu
                                       395
                   390
Thr Gly Pro Ala Ser Ser Pro Val Gly Pro Pro Ser Gly Leu Gln Ala
               405
                                   410
Ser Val Asn Leu Phe Pro Thr Ile Ser Val Ala Pro Ser Ala Asp Thr
           420
                               425
Ser Ser Glu Arg Ser Ile Tyr Lys Ala Arg Phe Leu Glu Asn Val Ala
                           440
                                               445
Ala Ala Glu Thr Glu Lys Gln Val Ala Leu Ala Gln Gly Arg Ala Glu
                       455
Thr Leu Ala Gly Ala Met Pro Asn Glu Ala Gly Gly His Pro Asp Ala
                                       475
                   470 . ,
Arg Gln Leu Trp Asp Ser Pro Glu Thr Ala Pro. Ala Ala Arg Thr Pro
                                   490
Gln Ser Pro Ala Pro Cys Val Leu Leu Arg Ala Gln Arg Ser Leu Ala
                               505
                                                   510
Pro Glu Pro Lys Glu Pro Leu Ile Pro Ala Ser Pro Lys Alà Glu Pro
                                           • 525
                           520
Ile Trp Glu Leu Pro Thr Arg Ala Pro Arg Leu Ser Ile Gly Asp Leu
                       535
Asp Phe Ser Asp Leu Gly Glu Asp Glu Asp Gln Asp Met Leu Asn Val
                   550
                                       555
Glu Ser Val Glu Ala Gly Lys Asp Ile Pro Ala Pro Ser Pro Pro Leu
               565
                                   570
Pro Leu Leu Ser Gly Val Pro Pro Pro Pro Pro Leu Pro Pro Pro Pro
            580
                               585
Pro Ile Lys Gly Pro Phe Pro Pro Pro Pro Leu Pro Leu Ala Ala
                           600
                                               605
Pro Leu Pro His Ser Val Pro Asp Ser Ser Ala Leu Pro Thr Lys Arg
                       615
Lys Thr Val Lys Leu Phe Trp Arg Asp Val Lys Leu Ala Gly Gly His
                   630
                                       635
Gly Val Ser Ala Ser Arg Phe Gly Pro Cys Ala Thr Leu Trp Ala Ser
                                   650
Leu Asp Pro Val Ser Val Asp Thr Ala Arg Leu Glu His Leu Phe Glu
                               665
Ser Arg Ala Lys Glu Val Leu Pro Ser Lys Lys Ala Gly Glu Gly Arg
                           680
Arg Thr Met Thr Thr Val Leu Asp Pro Lys Arg Thr Asn Ala Ile Asn
                       695
                                           700
Ile Gly Leu Thr Thr Leu Pro Pro Val His Val Ile Lys Ala Ala Leu
                                   715
                   710 (
Leu Asn Phe Asp Glu Phe Ala Val Ser Lys Asp Gly Ile Glu Lys Leu
```

```
730
Leu Thr Met Met Pro Thr Glu Glu Glu Arg Gln Lys Ile Glu Gly Ala
                          745
Gln Leu Ala Asn Pro Asp Ile Pro Leu Gly Pro Ala Glu Asn Phe Leu
                         760
                                            765
Met Thr Leu Ala Ser Ile Gly Gly Leu Ala Ala Arg Leu Gln Leu Trp
                      775
Ala Phe Lys Leu Asp Tyr Asp Ser Met Glu Arg Glu Ile Ala Glu Pro
                  790
                                     795
Leu Phe Asp Leu Lys Val Gly Met Glu Gln Leu Val Gln Asn Ala Thr
                                 810
Phe Arg Cys Ile Leu Ala Thr Leu Leu Ala Val Gly Asn Phe Leu Asn
                            825
Gly Ser Gln Ser Ser Gly Phe Glu Leu Ser Tyr Leu Glu Lys Val Ser
                         840
Asp Val Lys Asp Thr Val Arg Arg Gln Ser Leu Leu His His Leu Cys
                     855
Ser Leu Val Leu Gln Thr Arg Pro Glu Ser Ser Asp Leu Tyr Ser Glu
                                    875
             870
Ile Pro Ala Leu Thr Arg Cys Ala Lys Val Asp Phe Glu Gln Leu Thr
              885
                                 890
Glu Asn Leu Gly Gln Leu Glu Arg Arg Ser Arg Ala Ala Glu Glu Ser
                             905
Leu Arg Ser Leu Ala Lys His Glu Leu Ala Pro Ala Leu Arg Ala Arg
                         920
Leu Thr His Phe Leu Asp Gln Cys Ala Arg Arg Val Ala Met Leu Arg
                      935
Ile Val His Arg Arg Val Cys Asn Arg Phe His Ala Phe Leu Leu Tyr
                  950
                                     955
Leu Gly Tyr Thr Pro Gln Ala Ala Arg Glu Val Arg Ile Met Gln Phe
                                 970
Cys His Thr Leu Arg Glu Phe Ala Leu Glu Tyr Arg Thr Cys Arg Glu
                             985
Arg Val Leu Gln Gln Gln Lys Gln Ala Thr Tyr Arg Glu Arg Asn
                         1000
                                            1005
Lys Thr Arg Gly Arg Met Ile Thr Glu Thr Glu Lys Phe Ser Gly Val
                     1015
                                        1020
Ala Gly Glu Ala Pro Ser Asn Pro Ser Val Pro Val Ala Val Ser Ser
                 1030
                                    1035
Gly Pro Gly Arg Gly Asp Ala Asp Ser His Ala Ser Met Lys Ser Leu
              1045 1050
Leu Thr Ser Arg Leu Glu Asp Thr Thr His Asn Arg Arg Ser Arg Gly
          1060
                            1065
                                                1070
Met Val Gln Ser Ser Pro Ile Met Pro Thr Val Gly Pro Ser Thr
      107.5
                                            1085
Ala Ser Pro Glu Glu Pro Pro Gly Ser Ser Leu Pro Ser Asp Thr Ser
                     1095
                                        1100
Asp Glu Ile Met Asp Leu Leu Val Gln Ser Val Thr Lys Ser Ser Pro
                  1110
                                    1115
Arg Ala Leu Ala Ala Arg Glu Arg Lys Arg Ser Arg Gly Asn Arg Lys
                                 1130
               1125
Ser Leu Arg Arg Thr Leu Lys Ser Gly Leu Gly Asp Asp Leu Val Gln
          1140
                             1145
Ala Leu Gly Leu Ser Lys Gly Pro Gly Leu Glu Val
```